

OpenQMBP2023: New perspectives in the out-of-equilibrium dynamics of open many-body quantum systems



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Entanglement dynamics with non-local measurements: Numerical results.

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I will discuss some numerical results for the entanglement entropy dynamics along the quantum trajectories of a fermionic Kitaev chain, in the presence of measurements with a non-local character. The first part addresses a quantum-jump evolution with fixed-range string operators: a variety of behaviors emerge, ranging from volume-law, for extensive ranges of the string, to subvolume- and area-law, for finite-range strings. The second part deals with a quantum state diffusion dynamics with power-law decaying measurements: depending on the exponent of the power-law, we observe qualitatively different behaviors as those appearing in the previous scenario; these are reflected also in the probability distribution function of the measurement operator.

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